

18 December, 2020

Indicators of demographic context and territorial expression of the COVID-19 pandemic in Portugal

COVID-19: a territorial view on demographic context and territorial expression of the pandemic

The expression of the pandemic on national territory continues to be characterised by a high degree of heterogeneity. Some of the results obtained in this context:

- In the Norte region, the number of deaths between 9 November and 6 December 2020 was 1.4 times higher than in the same period of reference (average for the same period from 2015 to 2019). This was the only NUTS 2 region to exceed the national average value (1.26), with a set of 15 contiguous municipalities in the Tâmega e Sousa, Ave and Metropolitan Area of Porto sub-regions standing out, where the number of deaths was 1.5 times higher than in the reference period.
- On 16 December, there were 27,409 new cases in Portugal in the last 7 days. Between 18 November and 3 December there was a progressive decrease in the number of new cases of COVID-19 (last 7 days), with slight recoveries after that date, but the number of new cases remained below 30 thousand.
- In Portugal, on December 16, 2020, the 14-day incidence rate of COVID-19 disease was 534, corresponding to the number of new confirmed cases of COVID-19 in the last 14 days per 100,000 inhabitants.
- On December 8, the date of the last data update at the municipality level, the 14-day incidence rate of COVID-19 was 564 new cases per 100,000 inhabitants.
- The new cases registered in the last 14 days in the Norte region accounted for 53% of the total new cases in the country. Three sub-regions of this region - Alto Tâmega, Ave and Cávado - stood out for presenting more than 1,000 new cases per 100,000 inhabitants, although with distinct dynamics: Ave and Cávado registered a reduction in the number of new cases, while Alto Tâmega presented an exponential rise since November 10.
- On 8 December, 25 municipalities registered a number of new confirmed cases of COVID-19 (last 14 days) per 100,000 inhabitants above the threshold defined as extremely high risk (960 new cases per 100,000 inhabitants), 19 of which belonged to NUTS 2 Norte, representing 26% of the population living in this region.
- The lowest level of territorial concentration of new cases COVID-19 (last 14 days) occurred on December 8 and the highest on June 21, considering the location coefficient calculated weekly since April 19. Until June 21, the trend was towards a greater concentration of new registered cases, which was subsequently followed by a reduction in concentration.

I. Demographic and territorial context indicators

The number of deaths in the Norte region was 1.4 times higher than in the reference period

Figure 1 - Ratio between deaths in the last 4 weeks and deaths in the same reference period, Portugal, weeks between 2 to 29 March and 9 November and 6 December

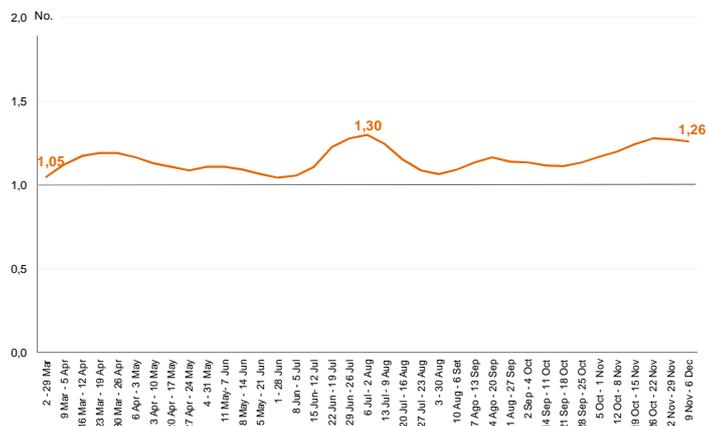
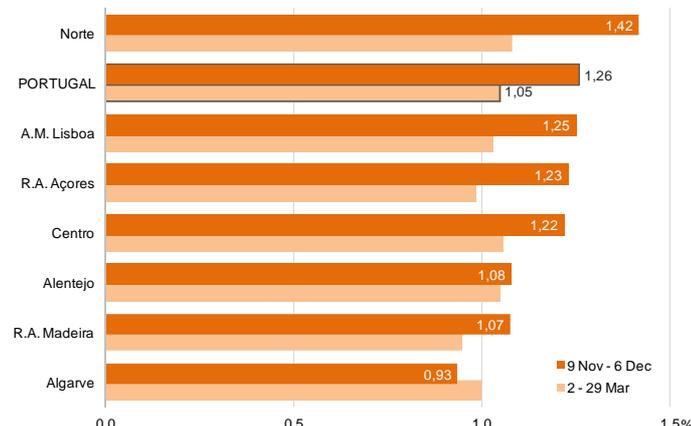


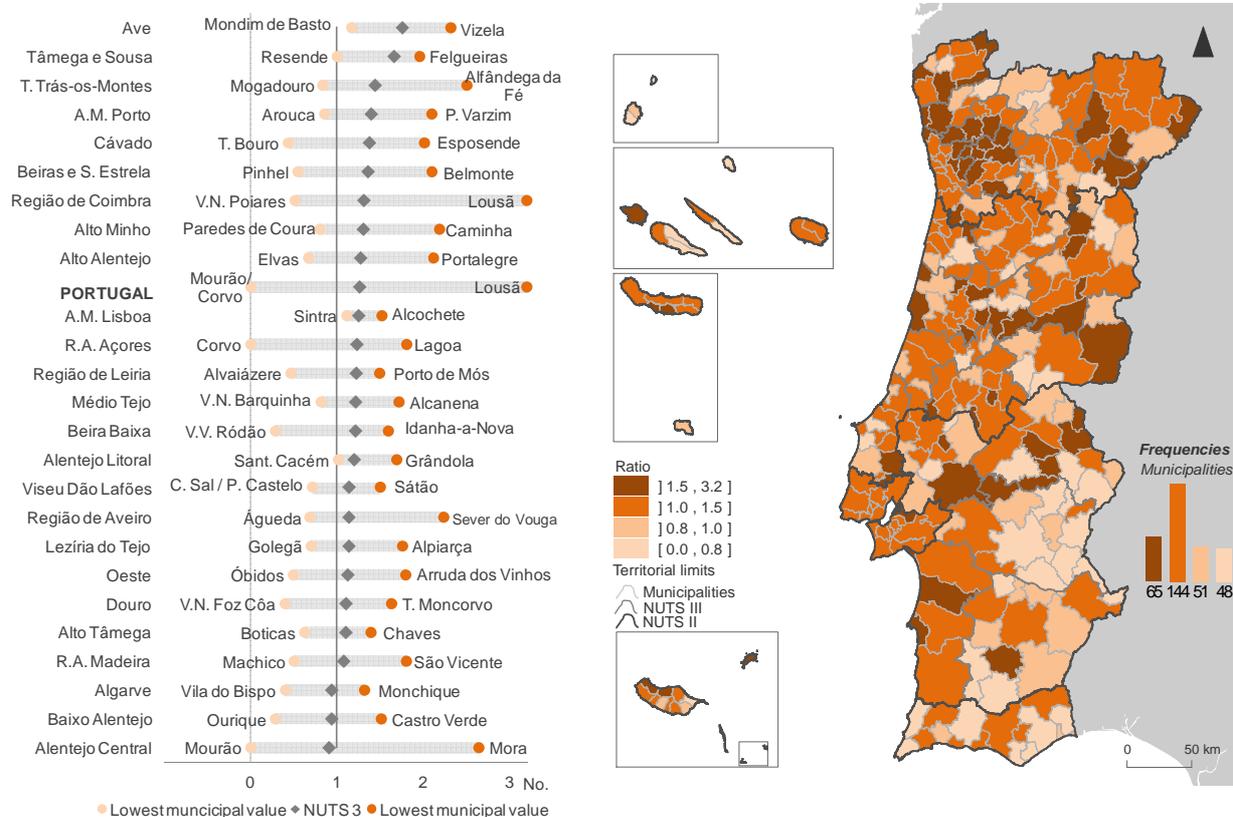
Figure 2 - Ratio between deaths in the last 4 weeks and deaths in the same reference period, Portugal and NUTS 2, weeks from 2 to 29 March to weeks and from 9 November and 6 December



Source: INE, I.P., Statistics on Deaths (Preliminary (2020) and Final Results (2015 up to 2019)).

In 209 municipalities the number of deaths between 9 November and 6 December was higher than the same reference period

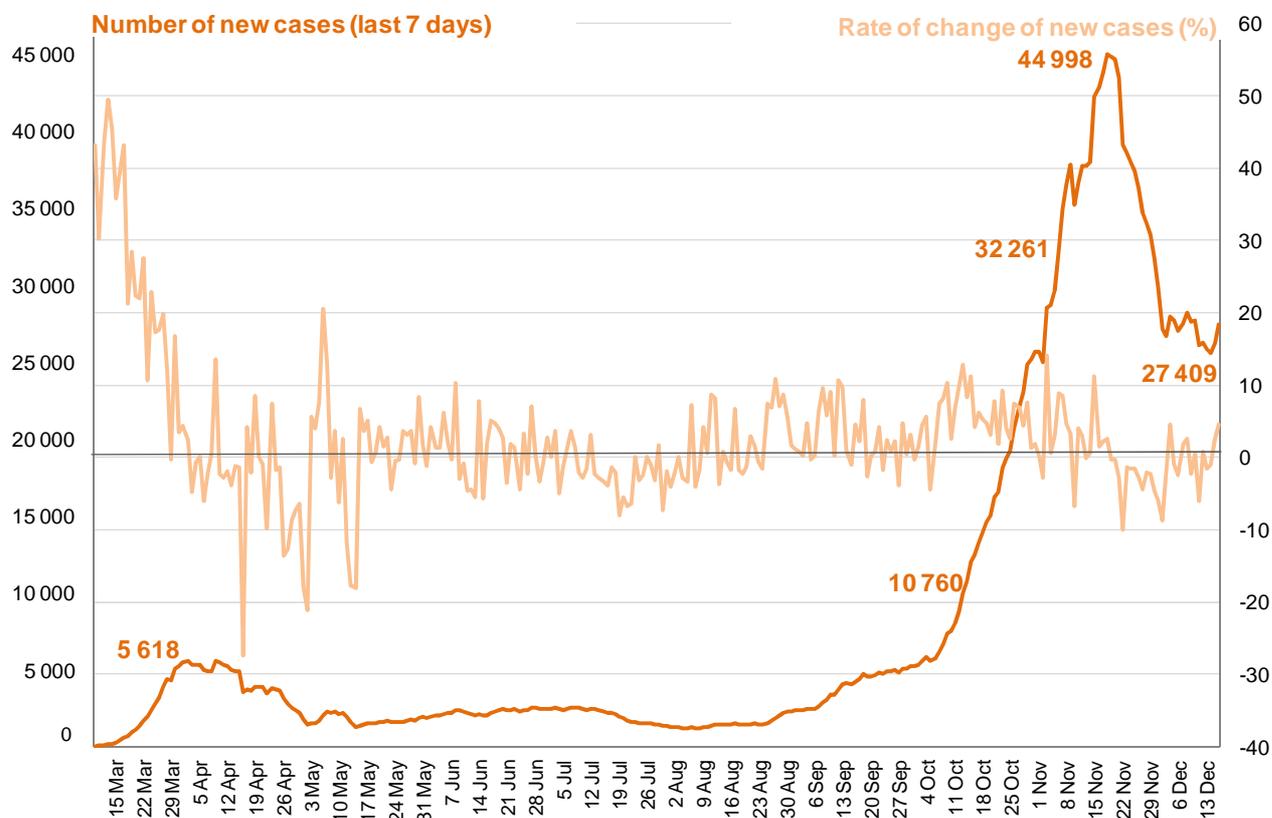
Figure 3 - Number of deaths in the last four weeks (9 November to 6 December) per deaths in the same period of reference, Portugal, NUTS 3 and municipality



Source: INE, I.P., Statistics on Deaths (Preliminary (2020) and Final Results (2015 up to 2019)).

II. The expression of the pandemic in the municipalities

Figure 4- Number of new confirmed cases (last 7 days) of infection by SARS-CoV-2/COVID-19 and respective rate of change, Portugal, per day (10/3/2020 to 16/12/2020)

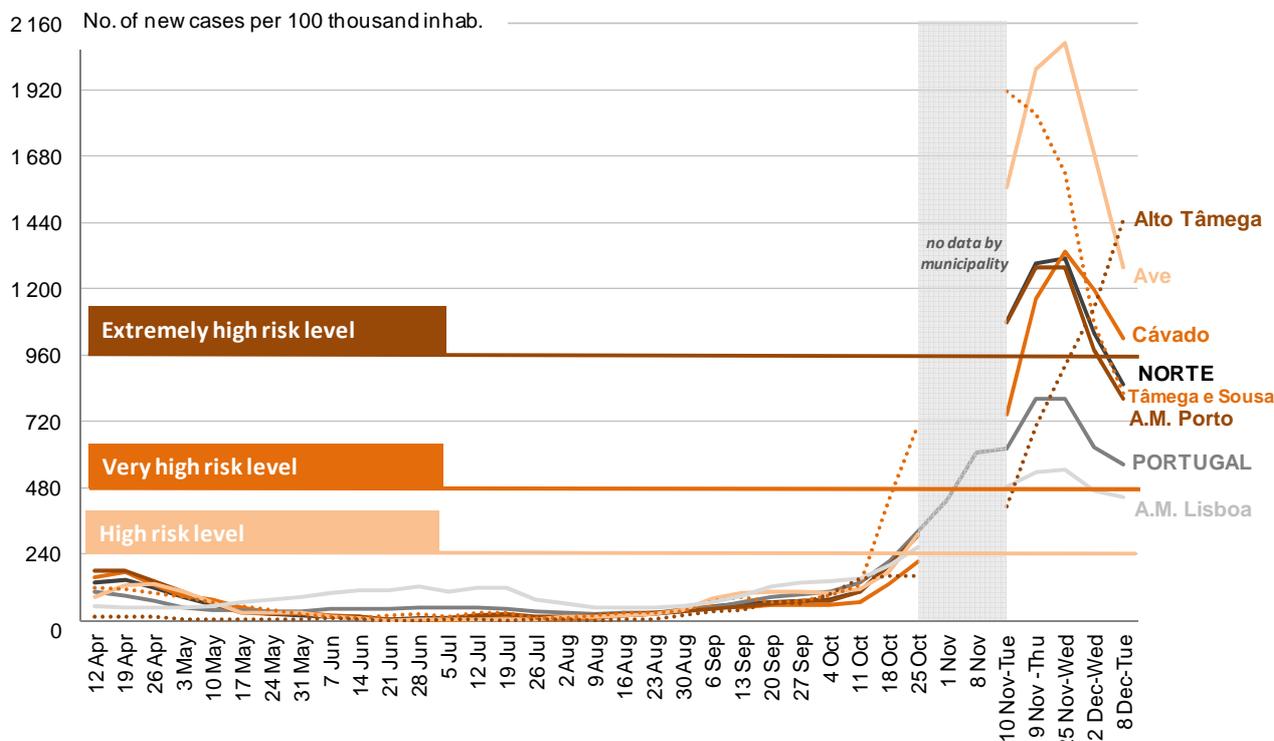


Source: Directorate-General of Health, Daily COVID-19 Status Report (released up to December 17).

Note: The number of new cases includes the +4,375 confirmed cases resulting from the historical update released by the Directorate-General of Health in the COVID-19 Status Report made available on 16 November (data on the situation up to 15 November) with impact on the new cases in the last 7 days for the period 15-21 November. The dates marked on the graph axis correspond to Sundays.

53% of new confirmed cases of COVID-19 in the last 14 days were registered in the Norte region

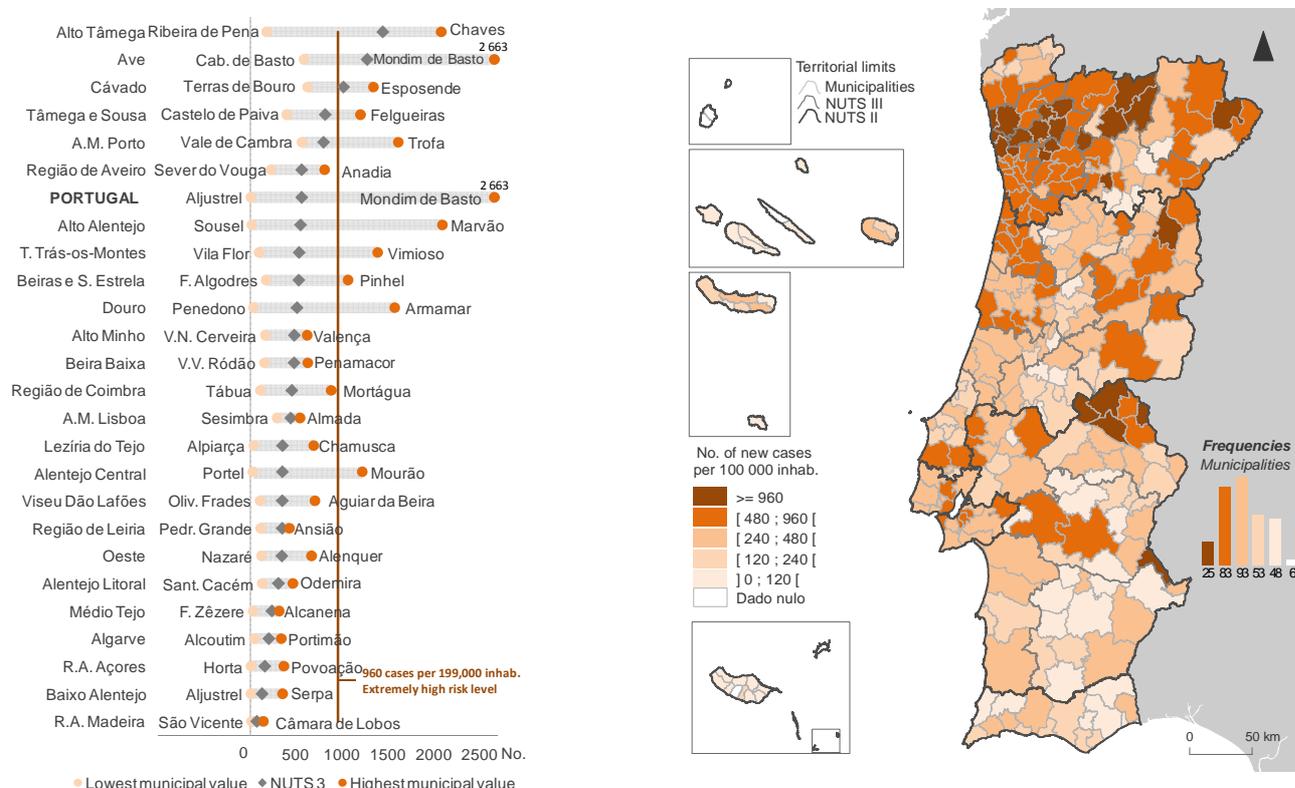
Figure 5- 14-day cumulative incidence rate of SARS-CoV-2/COVID-19, Sundays - 12 April to 25 October; Tuesday - 10 November; Thursday - 19 November, Wednesday - 25 November, Wednesday - 2 December and Tuesday - 8 December, Portugal, Norte region and sub-regions of Alto Tâmega, Ave, Cávado, Tâmega e Sousa and metropolitan areas of Porto and Lisboa



Source: Directorate-General of Health, Daily COVID-19 Status Report (released up to December 14). INE, I.P., Annual estimates of resident population, 31 December 2019. Note: The absence of values at the regional level on 1 and 8 November is due to the interruption in the dissemination of data at the municipality level in the COVID-19 Status reports. The dates marked on the graph axis correspond to Sundays until 8 November and then to the reference days associated with the 14-day cumulative incidence indicator that is now being released weekly by the Directorate-General of Health (see technical note at the end of the press release).

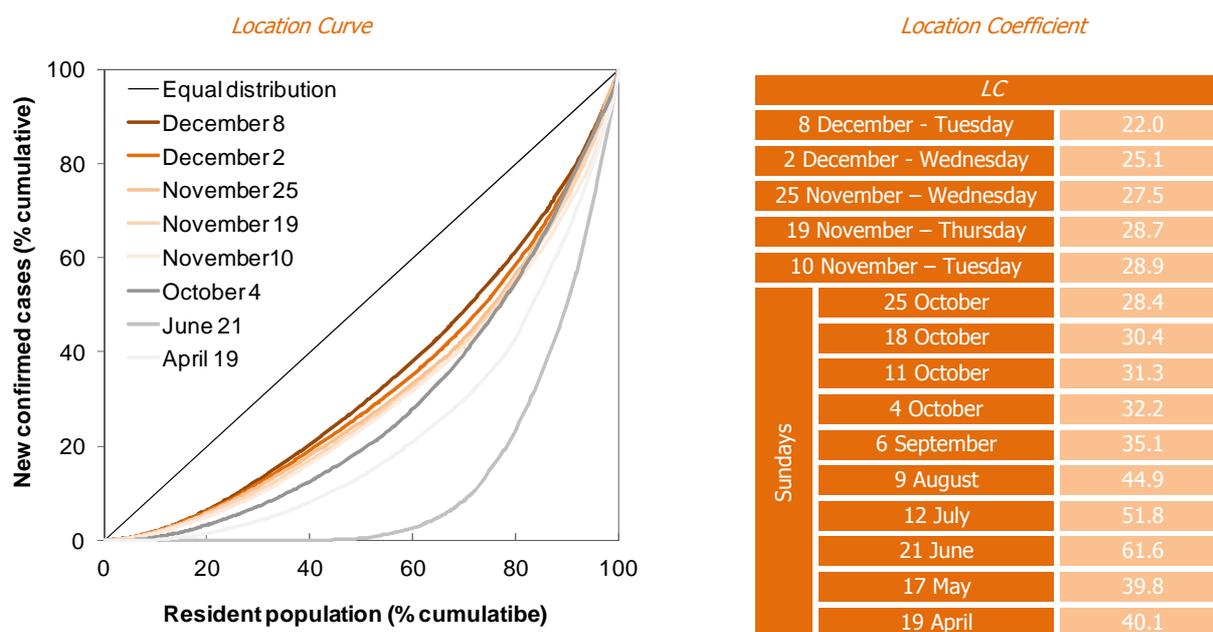
25 municipalities were at extremely high risk, with more than 960 new cases per 100,000 inhabitants

Figure 6 – 14-day cumulative incidence rate of infection by SARS-CoV-2/COVID-19 on 8 December, Portugal NUTS 3 and municipality



Source: Directorate-General of Health, Daily COVID-19 Status Report (released on December 14); INE, I.P., Annual estimates of resident population, 31 December 2019. Note: In the graph, in NUTS 3 sub-regions with zero data status, the municipalities with the lowest value in the indicator are identified.

Figure 7- Territorial concentration of new confirmed cases of infection by SARS-CoV-2/COVID-19 (last 14 days), in relation to the resident population, based on the distribution by municipality.



Source: Directorate-General of Health, Daily COVID-19 Status Report (released up to December 14); INE, I.P., Annual estimates of resident population, 31 December 2019. Note: For the calculation of the location coefficients zero cases were considered for the municipalities with no value in the Directorate-General of Health Status report (0 or < 3 cases).

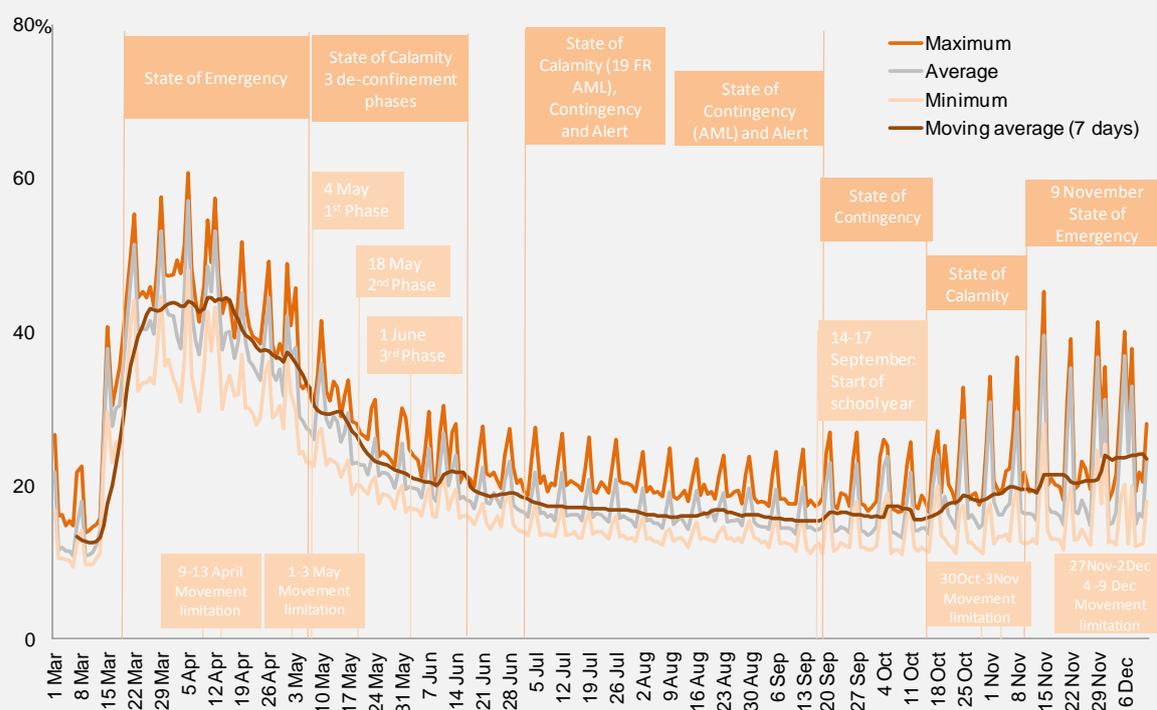
Population mobility indicators at regional level: an analysis based on information from Facebook's "Data for Good" Initiative

Taking advantage of Facebook's "Data for Good" initiative, the figure below shows the proportion of the population "staying put" between 1 March and 12 December, namely the minimum, average and maximum values calculated based on the NUTS 3 sub-regions. The proportion of population that "stayed put" is based on the number of Facebook users associated with a single reference grid of 600mx600m during 8 am and 8 pm on day x, requiring at least three occurrences during that time period. For a better contextualisation of the information, the figure includes the main key moments associated with the COVID-19 pandemic in Portugal.

It is possible to observe that on Sundays there is generally less mobility of the population than on other days of the week. It is also noteworthy that after the first confirmed cases of COVID-19 and following the declaration of the first State of Emergency, there is a decrease in the mobility of the population, followed by an increase in the levels of mobility after the implementation of the de-confinement measures, the first phase of which started on 4 May. More recently, following the declaration of a new State of Calamity on 15 October, the restriction of movement between municipalities declared between 30 October and 4 November and the declaration of a new State of Emergency on 9 November and its renewal on 24 November and 9 December, there has been a further overall reduction in the average levels of mobility.

Considering the moving average of the last 7 days, this recent reversal of the trend towards a reduction in mobility has been taking place since mid-October and is intensified following the restrictions of movement between municipalities associated with the public holidays of 1 and 8 December.

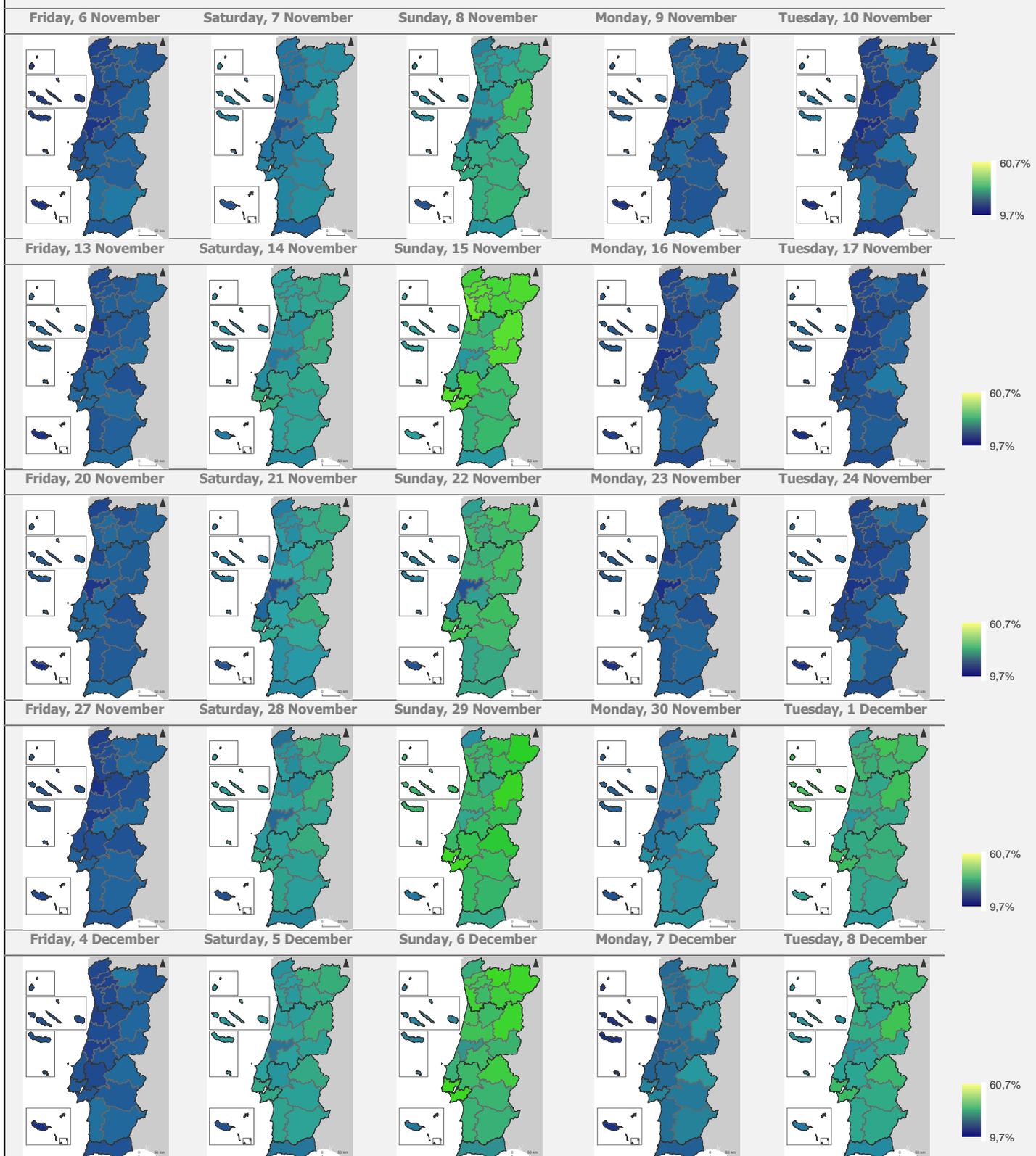
Proportion of the population "staying put" between 1 March and 12 December – minimum, average and maximum values of NUTS 3 sub-regions



Source: Facebook's "Data for Good" Initiative. Data provided by Carnegie Mellon University. Note: The dates marked on the graph axis correspond to Sundays.

The following figure shows the population's mobility levels for five days of the week (Friday, Saturday, Sunday, Monday and Tuesday) from 6 November to 8 December, thus including the periods of limitation of movement between municipalities, decreed around the holidays of 1 and 8 December, including the recommendation to grant the day-off and the suspension of teaching activity on 30 November and 7 December. Overall, there are lower levels of mobility on Sundays, as well as on weekdays with restrictions of movement between municipalities and, in particular, on Tuesdays coinciding with the holidays of 1 and 8 December.

Proportion of the population "staying put" on Fridays, Saturdays, Sundays, Mondays and Tuesdays from 6 November to 8 December by NUTS 3



Fonte: Iniciativa "Data for Good" do Facebook. Dados cedidos pela Carnegie Mellon University.